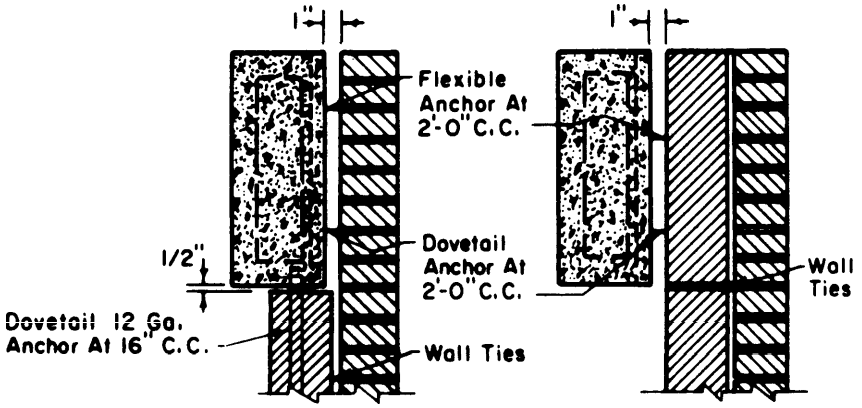
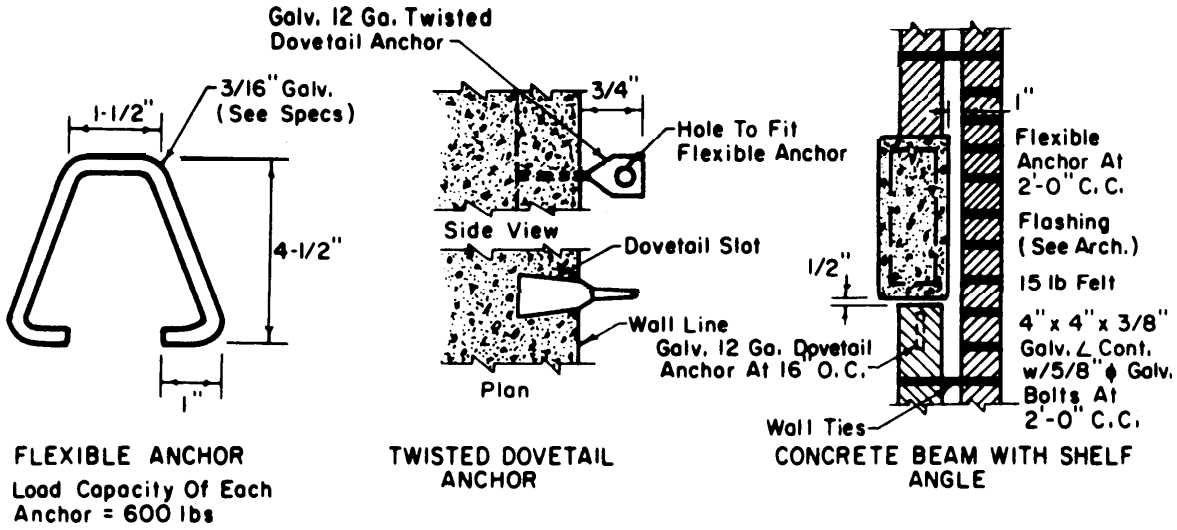
# APPENDIX C

# FRAME AND WALL CONSTRUCTION DETAILS

Figures C-1 through C-10 illustrate types of construction for expansive foundation soils. These figures were taken from U.S. Army Corps of Engineers Construction Engineering and Research Laboratory Technical Report M-81. The figures show practical wall ties to concrete and steel beams, wall connections with control joints, details of interior partitions, bar joist first floor framing with grade beams, and stiffened mat foundations.




WALL ANCHORAGE TO CONCRETE BEAM




FLEXIBLE ANCHOR
Load Capacity Of Each Anchor = 600 lbs

TWISTED DOVETAIL ANCHOR

CONCRETE BEAM WITH SHELF ANGLE

Note:
Ties to beam are required when column ties are omitted.

*Figure C-1. Wall ties to concrete beams.*

U. S. Army Corps of Engineers

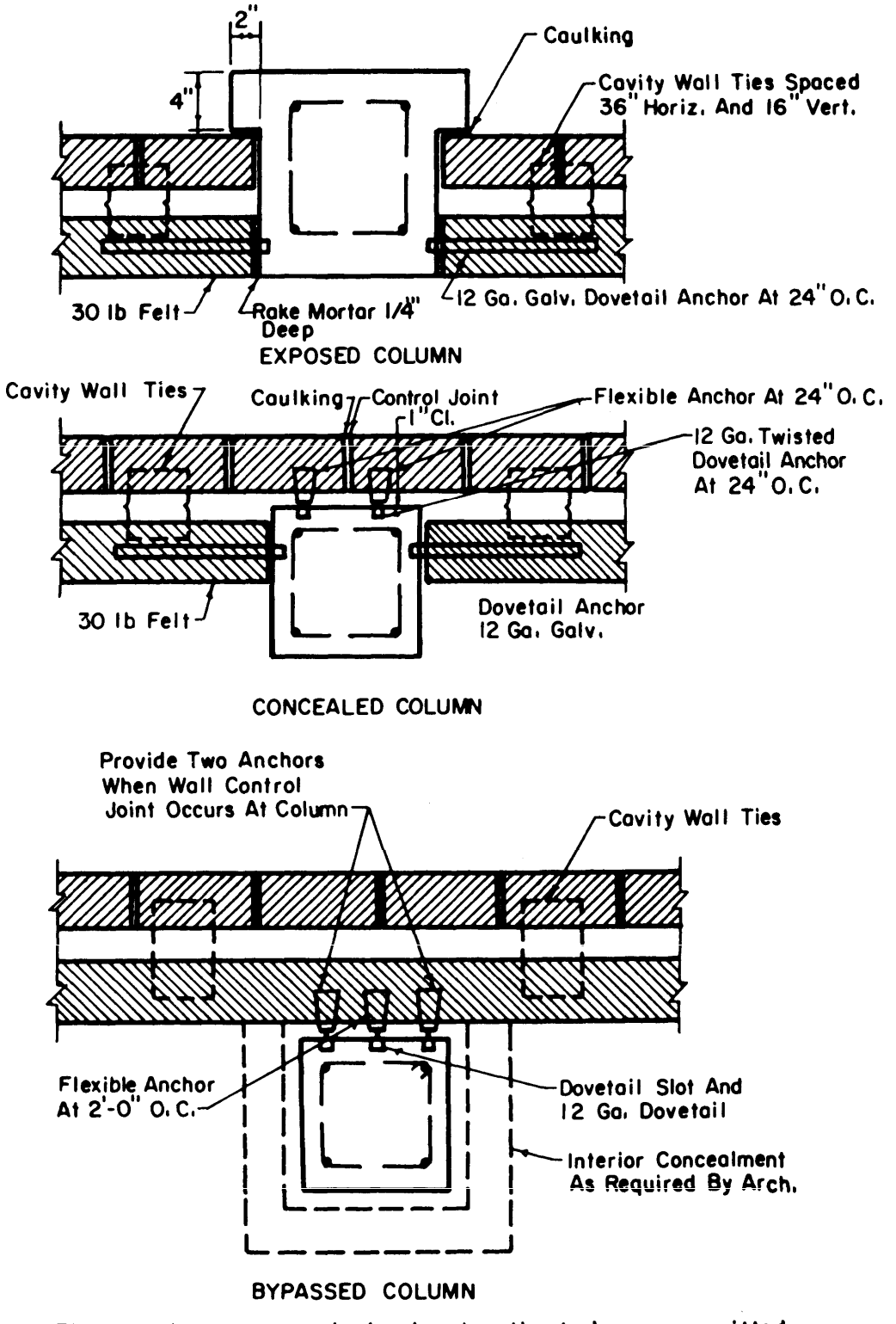
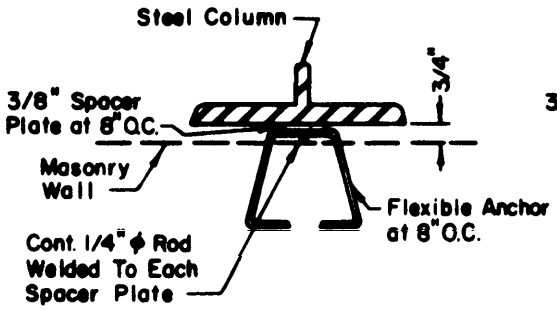
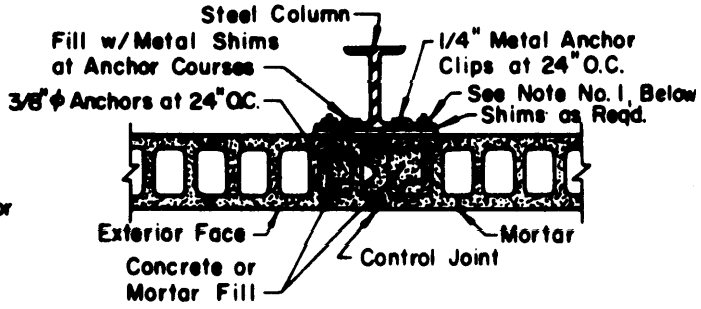



*Figure C-2. Wall ties to concrete column.*

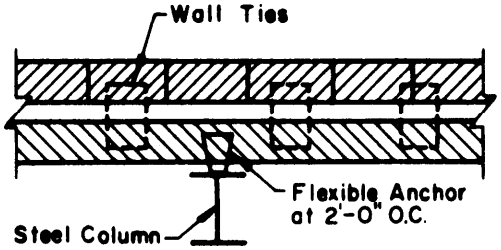
U. S. Army Corps of Engineers



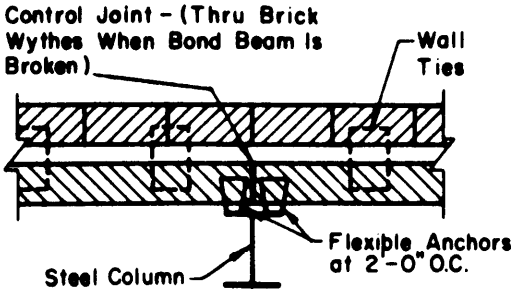

FLEXIBLE ANCHOR



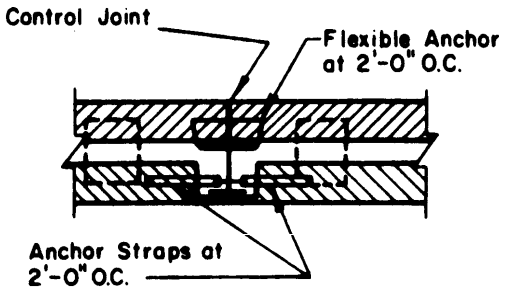

OPTIONAL WALL AND COLUMN CONNECTION




STEEL COLUMN - NO CONTROL JOINT

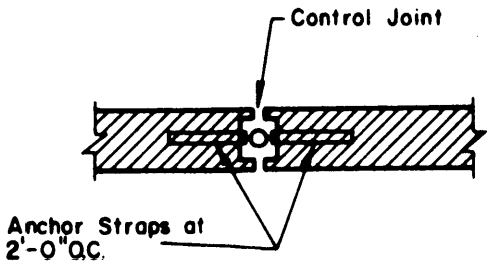



STEEL COLUMN - WITH CONTROL JOINT




Masonry Shall Be 3/4" Clear All Around Steel Column

STEEL COLUMN IN EXTERIOR WALL




Masonry Shall Be 3/4" Clear All Around Steel Column

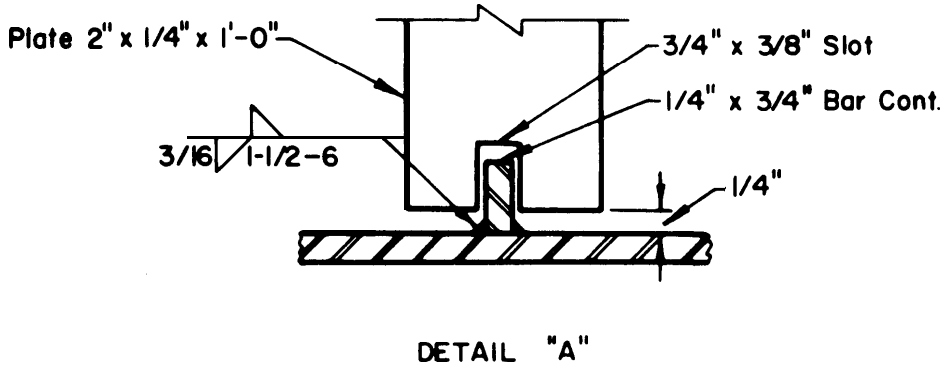
STEEL COLUMN IN INTERIOR WALL

Ties To Columns Are Required Only When Ties To Beam Above Are Omitted.
Do Not Connect Column To Wall At Corners of Buildings

Note:
1. Nuts Should Not Be Tightened Excessively, Horizontal Movement of Wall Is Necessary.

*Figure C-3. Wall ties to steel column (Sheet 1 of 2).*

U. S. Army Corps of Engineers




DETAIL "A"

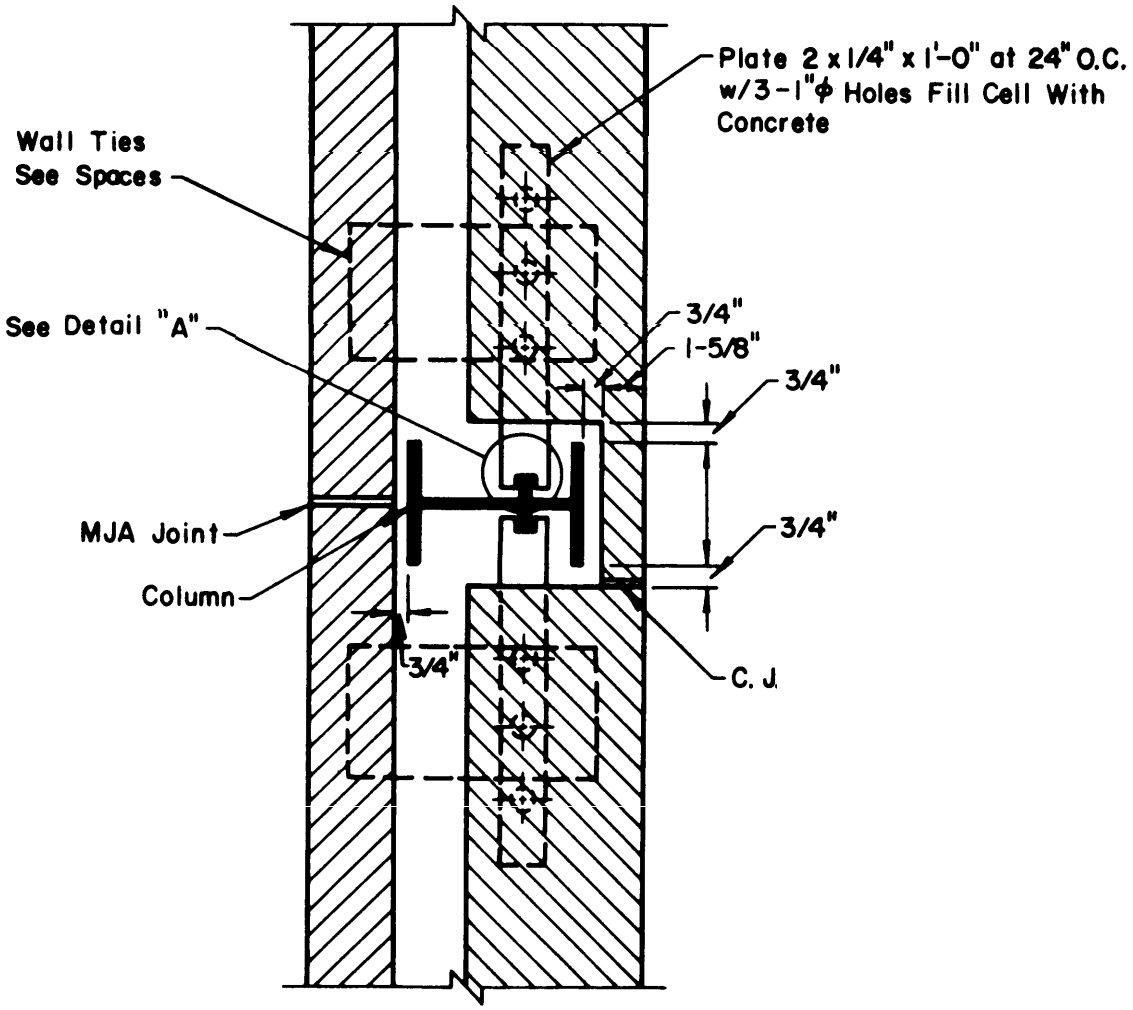
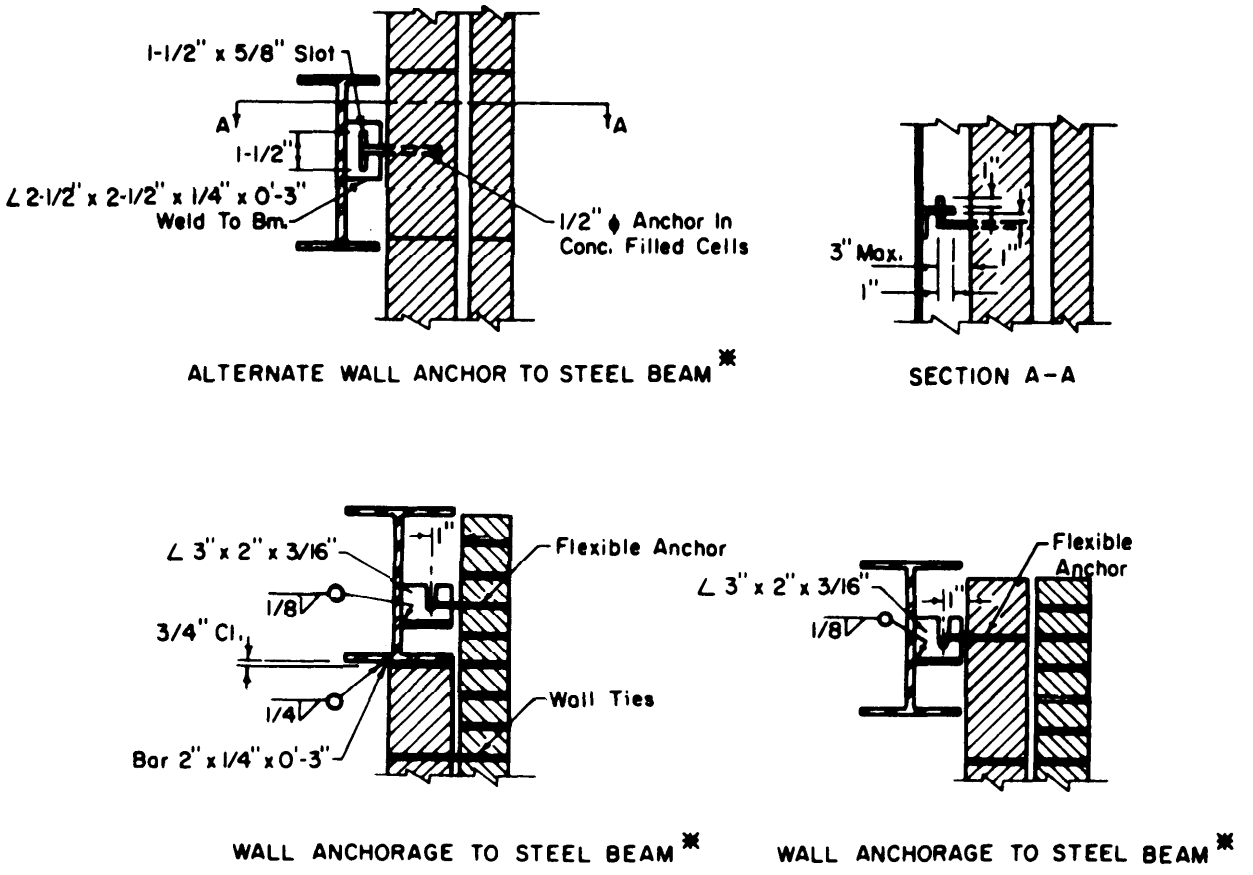



*Figure C-3. (Sheet 2 of 2).*

U. S. Army Corps of Engineers



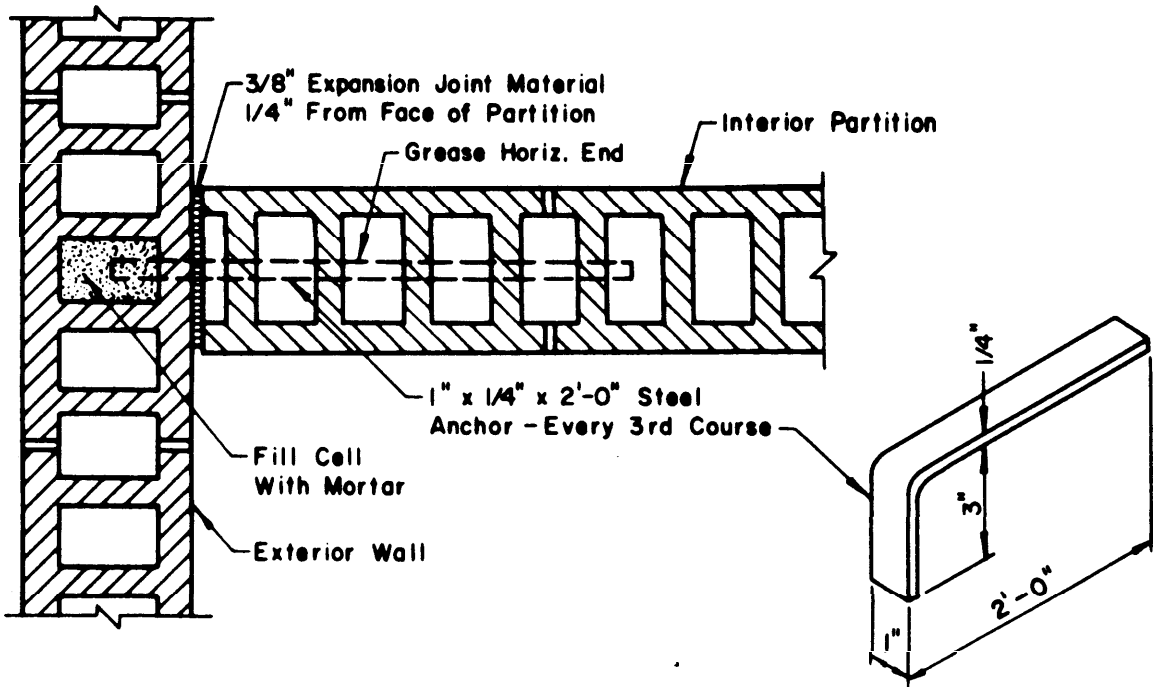

Note:

Ties to beam required only when ties to column are omitted.

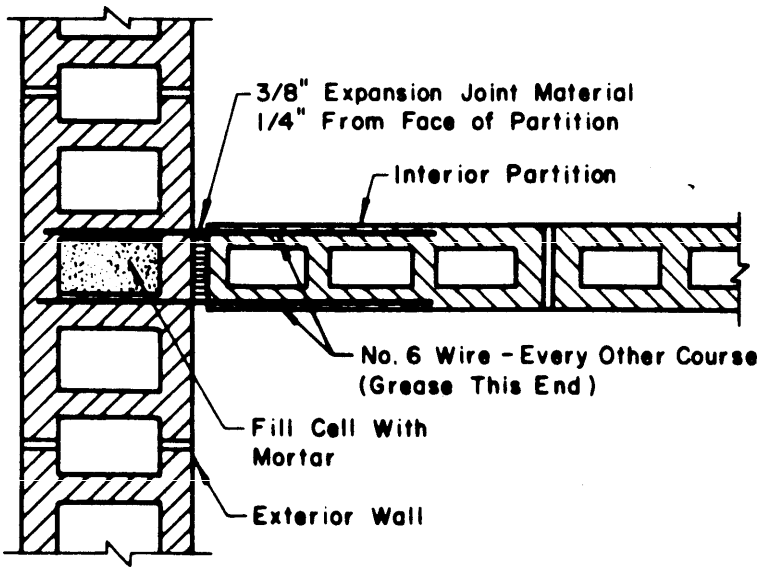
* 2'-0" Spacing for Exterior Walls
4'-0" Spacing for Interior Walls

*Figure C-4. Wall ties to steel beam.*

U. S. Army Corps of Engineers



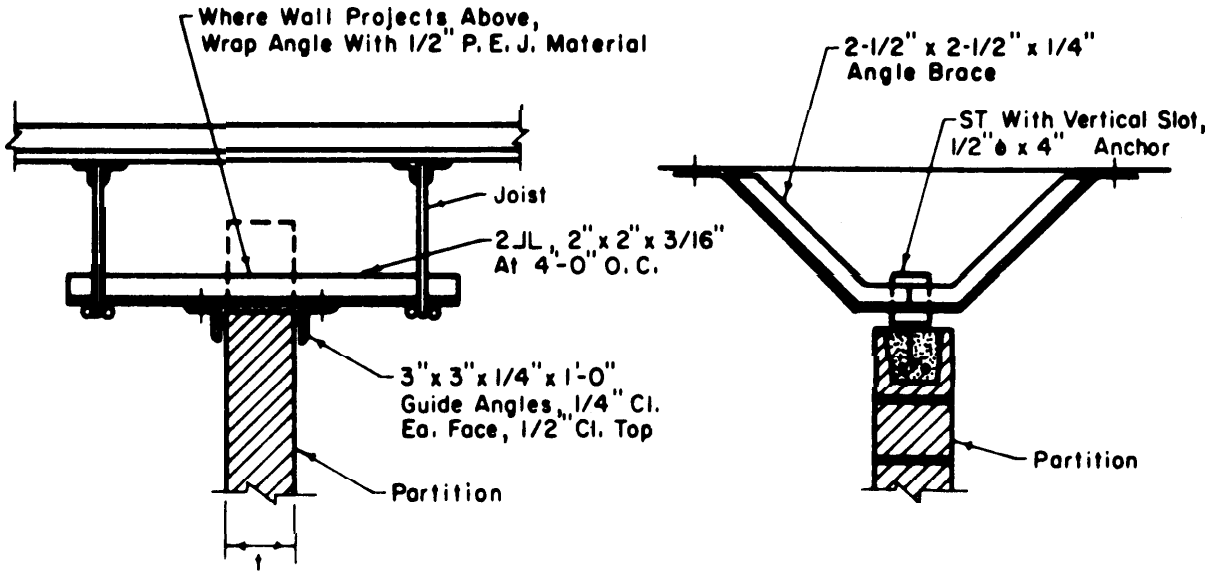

FOR PARTITIONS 6" WIDE OR WIDER




FOR 4" WIDE PARTITIONS

*Figure C-5. Wall connections with control joints.*

U. S. Army Corps of Engineers



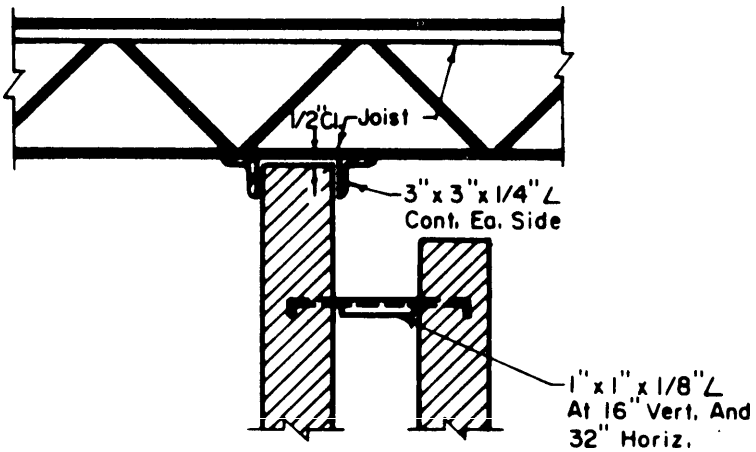




*Figure C-6. Typical details of interior partitions.*

U. S. Army Corps of Engineers

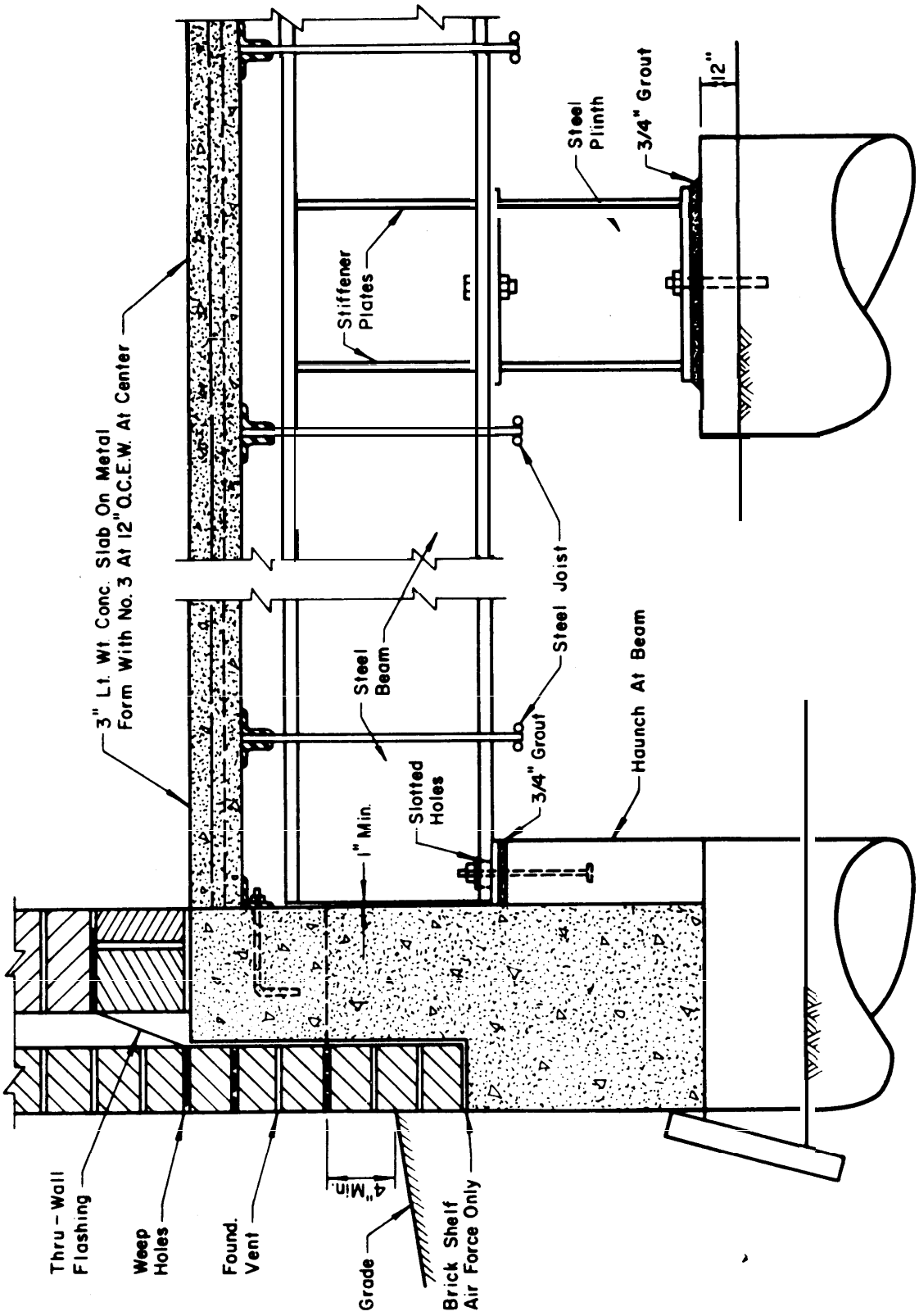



*Figure C-7. Typical bar joist first floor framing.*

U. S. Army Corps of Engineers

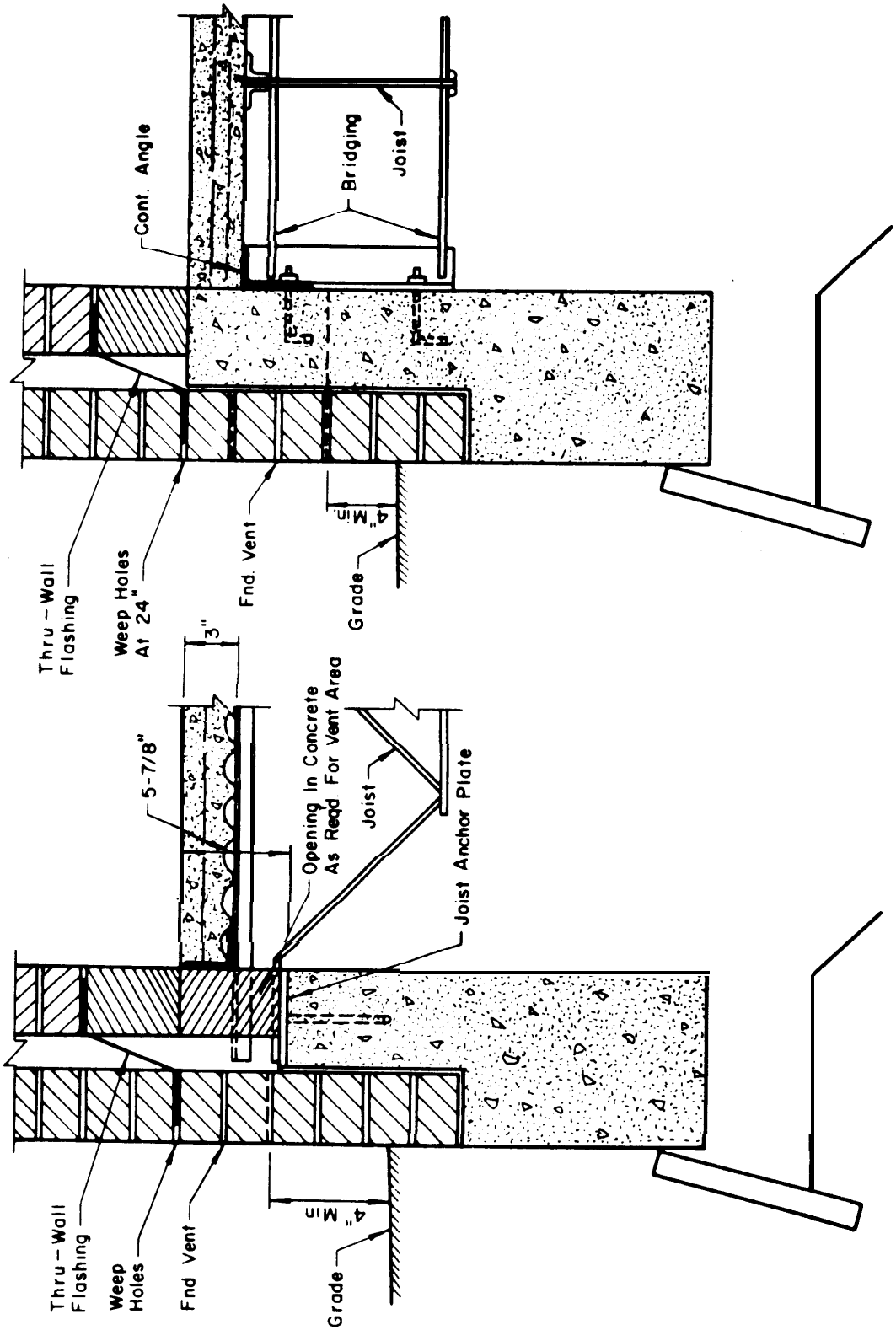



*Fig C-8. Typical cast-in-place or precast concrete grade beam with steel bar joist floor framing.*

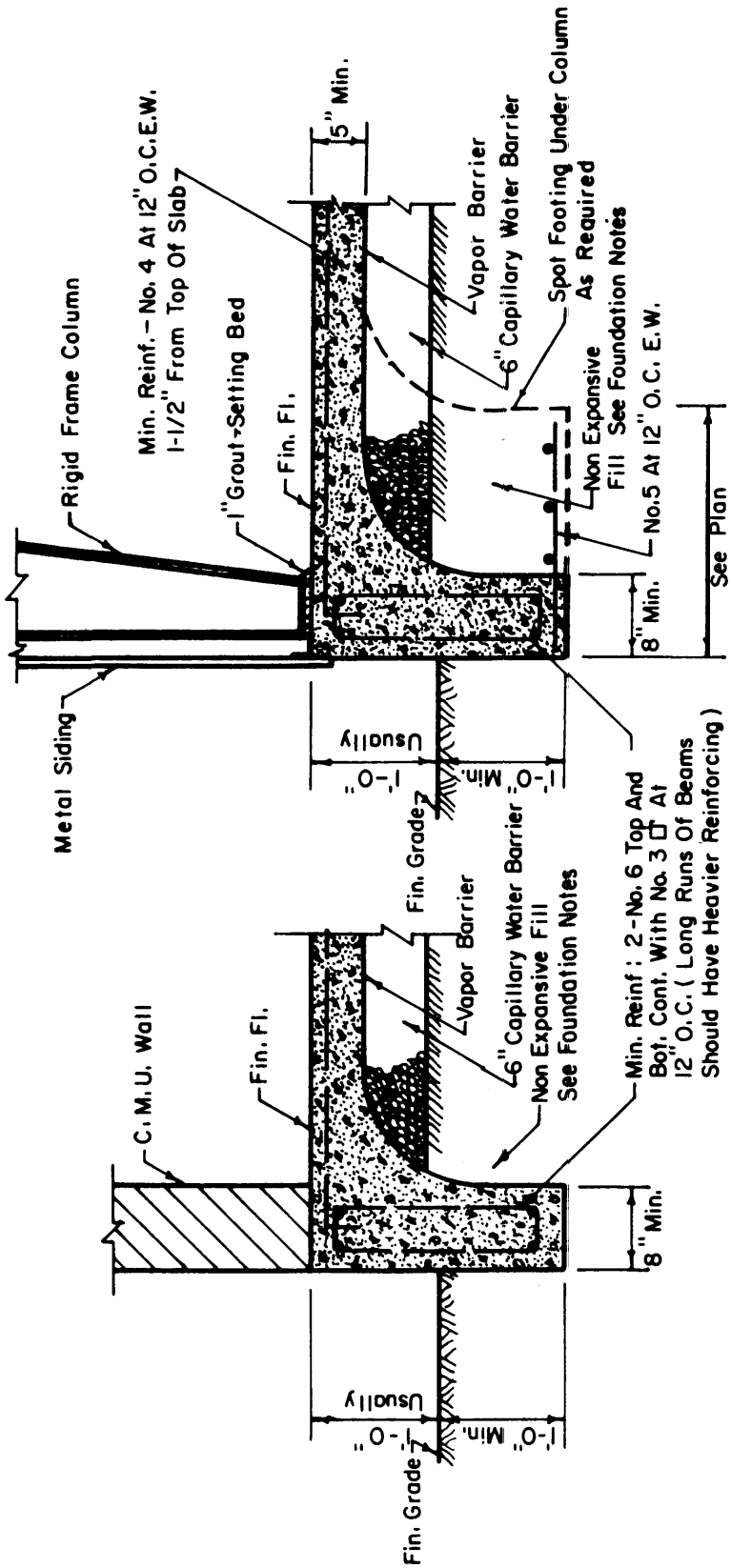



*Figure C-9. Typical ribbed mat foundations.*

U. S. Army Corps of Engineers

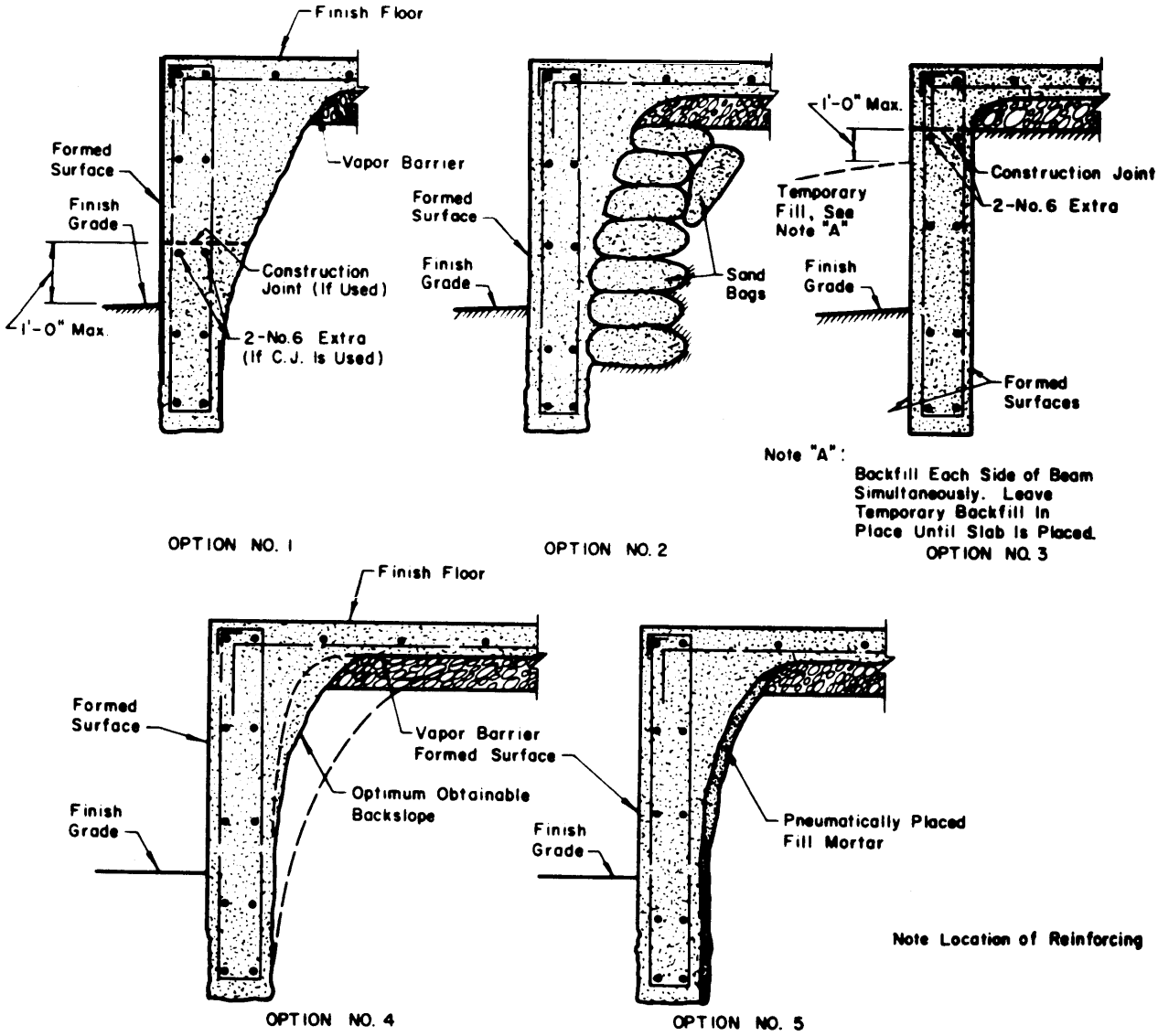



*Figure C-10. Optional construction details of exterior beams (interior beam similar) for ribbed mat construction.*

U. S. Army Corps of Engineers